Syllabus

Phil 210: Logic CRN: 15047
Fall 2020

Instructor Information:

Waisan Ng (6th Year Graduate Student, Philosophy Department)
wn6@rice.edu
Office Hours: TBD (or by appointment)
Office Hour Location: Zoom

Meeting Time and Location:

MWF: 05:15PM - 06:10PM (Central Time)*
Location: Zoom
*For students taking the course asynchronously, see the accommodation policies specified under "special arrangements for asynchronous learning".

Course Values:

In this course we value:

(1) Asking questions: The materials presented in this course are highly abstract in nature and it is not uncommon for students who lack relevant previous training to get lost in the symbolism. Asking clarifying questions, however silly they seem, is often a service to the class and is very welcomed.
(2) Collaborations: This course is not curved and working together with your peers when the relevant rules permit is highly encouraged. A significant amount of class time will be devoted to group work. Logic is more fun when learned together.
(3) Perseverance: From my experience, students in this course vary a lot in the timing where the subject matters start to make sense to them. For those who do not have a background in logic or other studies that involve heavy symbolic operations, the materials might take a longer time to penetrate. It takes a certain level of patience and perseverance to familiarize yourself with the subject matter until the relevant skills start to develop.

Course Goals:

Students are expected to:

(1) Be fluent in 2 formal languages – SL and QL, which includes a mastery of the skills to construct sentences in these languages, to analyze their logical relationships, and to operate formal derivation systems.
(2) Develop an ability to read proofs, to construct clear and precise arguments using logical definitions, to understand how we accumulate logical knowledge.
(3) Develop a sensitivity to some key features of natural languages as compared to formal language, so as to better evaluate arguments in natural language.
(4) Understand the importance of logic in the analytic tradition of philosophy, and have a basic exposure to the relevance of logic to other disciplines.

Class Format

(1) As an unfortunate result of the pandemic, this course will be delivered fully online. This implies that unless further specified, all meetings (including office hour meetings) will be delivered on Zoom, and all document transactions (e.g. homework, exam, bonus questions) will be carried out on Canvas. For some homework assignments, students will be expected to type their answers on Canvas, but the technical requirement of this course will be minimal.
(2) In order to accommodate for students who need to take the class asynchronously, the class will be recorded and uploaded to the cloud. However, since we will still have a significant amount of classroom discussions, presentations, group practices, and questions with bonus credit will be given out in class, taking the class synchronically will still be strongly recommended.

Special Learning Arrangements for Asynchronous Learning

If you will not be able to attend the class synchronously, please let me know in the first week of class. I will be happy to discuss possible accommodations that you will need to compensate for (1) the lost experience of class discussion/interaction/presentation; (2) the difficulties of meeting the deadlines because of distant time zone, (3) difficulties of attending the office hours. Possible accommodations include study group formation, fine-tuning of assignment deadlines, and additional office hours. However, no accommodation in terms of grading will be given merely on that basis.

Netiquette Expectations

Remote learning makes classroom interaction slightly harder, but we can work together to create a good remote learning environment by sticking to the following protocols:

(1) Have your camera on: your facial expressions and body languages are important communication channels.
(2) Raise your "hand": you can use the "raise hand" function in Zoom whenever you have a question or a comment.
(3) Be prepared to discuss problems and show your work: at some point students will be asked to work on some exercise problems, either within a breakout room or in front of the whole class. Microphones will be necessary for that purpose. Get a writing pad or mouse to show your work to others.
(4) Mute and Unmute: to avoid unnecessary background noise, unmute yourself only when you want to talk.
(5) Be prepared to be recorded: dress, talk, and use the chat box in a way that befits a classroom setting.
(6) Technical Problems: In case the connection breaks down, allow for 10 minutes to reconnect yourself to the classroom. If I fail to set up the classroom again within 10 minutes, the class is ended automatically. I will make further announcements about rescheduling.
(7) I reserve the right to remove students from the classroom in case their behaviors are too disruptive for others, but that will be exercised only in extreme situations.

Grading Scale:

A+	97+	B+	85+	C+	70+	D+	55+
A	93+	B	80+	C	65+	D	50+
A-	90+	B-	75+	C-	60+		

Assessment Method:

- There are **four take-home examinations** during the semester. Each will account for 20% of your grade, so 80% in total.
- There are **10 weekly graded homework assignments**. They are opportunities for you to improve your course performance. You MAY replace your homework average with your lowest-scored exam.
- There is a personal/group project which aims to explore the relationship of logic with other academic discipline. It will account for the rest 20% of your grade.
- I will give out bonus questions from time to time. You may earn extra credit therefrom.

Lateness Policy:

Graded homework and exams are due on Canvas by the beginning of class. Late homework and exams will be discounted 10% daily (i.e. 10 points will be taken away daily for an assignment of 100 points). If need a time allowance for any special reason, please let me know via email.

Required Texts and Materials:

We will use Prof. Richard Grandy, Michael Barkasi, and Joshua Reagan's *Mathematical Logic*. Prof. Richard Grandy is a Professor Emeritus at Rice, Michael Barkasi, and Joshua Reagan are his former graduate students. They wrote this textbook and made it available to the public for free. The pdf files for the course textbook will be in the Resources folder. All pedagogical materials for the course (exercises, lecture powerpoint, exams, homework assignment) will be available on Canvas.

Honor Code:

- Homework assignments are open-book and are open to collaborations, under the conditions specified on the first page of the homework assignments.
- ***No assistance of any kind is permitted on examinations***—no notes, textbook, friends, internet, *etc*. If you have questions during an examination, please e-mail me.
- Each completed homework, quiz and exam must have a signed honor pledge

Title IX Notification:

Rice University cares about your wellbeing and safety. Rice encourages any student who has experienced an incident of harassment, pregnancy discrimination or gender discrimination or relationship, sexual, or other forms interpersonal violence to seek support from The SAFE Office.

At Rice University, unlawful discrimination in any form, including sexual misconduct, is prohibited under Rice Policy on Harassment and Sexual Harassment (Policy 830) and the Student Code of Conduct. As the instructor and a responsible employee, I am required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to the Title IX Coordinator on campus. Although responsible employees are required to make this notification, it is the student's choice to pursue a formal complaint. The goal is to make sure that students are aware

of the range of options available and have access to the resources when in need. For more information, please visit safe.rice.edu, titleixrice.edu, or email titleixsupport@rice.edu.

Disability Policy:
Any student with a documented disability needing academic adjustments or accommodations must speak with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities should also contact Disability Support Services, Rm. 111 Allen Center, 713-348-5841, www.dss.rice.edu.

Note:
The specific assignments, due dates, etc. may be changed if necessary due to circumstances beyond my control. Should this occur I will post an updated syllabus and send out a notification as soon as possible. Please read your emails and Canvas's announcements for any announced change.

Week	Lesson	Date	Topic	Deadlines
1	1	Aug 24	Introduction and Overview (Ch. 1, pp. 1-10)	
	2	Aug 26	SL Syntax (Ch. 2, pp. 15-21)	
	3	Aug 28	SL Models/Truth (Ch. 2, pp. 21-26)	
2	4	Aug 31	Truth Tables and Entailments (Ch. 2, pp. 26-35)	HW1 Due
	5	Sept 2	Entailments and TFT/TFF/TFC (Ch. 2, pp. 31-35)	
	6	Sept 4	Other Logical Relations (Ch 2, pp. 36-39)	
3		Sept 7/8	Labor Day 9/7 (No Class)	HW2 Due (9/8)
	7	Sept 9	Introduction to Recursive Proof (1) (Ch. 1, pp. 10-13)	
	8	Sept 11	Introduction to Recursive Proof (2) (Ch. 1, pp. 10-13)	
4	9	Sept 14	Natural Deduction for SL (Chapter 6)	**Exam 1 Due**
	10	Sept 16	Natural Deduction for SL (Chapter 6)	
	11	Sept 18	Natural Deduction for SL (Chapter 6)	
5	12	Sept 21	Natural Deduction for SL (Chapter 6)	HW3 Due
	13	Sept 23	Natural Deduction for SL (Chapter 6)	
	14	Sept 25	SL Translation and its Problems	
6	15	Sept 28	QL1 Syntax (Ch. 3, pp. 59 - 66)	**Exam 2 Due**
	16	Sept 30	QL1 Model (Ch. 3, pp. 66 - 69)	
	17	Oct 2	QL1 Truth in a model (Ch. 3, pp. 69 - 75)	
7	18	Oct 5	QL1 Truth in a model (2) (Ch. 3, pp. 69 - 75)	HW4 Due
	19	Oct 7	QL1 Logical Truth and Entailment	
	20	Oct 9	QL1 Logical Truth and Entailment – ESTHER DROP DEADLINE (Ch. 3, pp. 75 - 76)	
8	21	Oct 12	QL1 Entailment (Ch. 3, pp. 77 - 79)	HW5 Due
	22	Oct 14	QL1 Other Logical Relations (Ch. 3, pp. 77 - 79)	
	23	Oct 16	QL1 Translation (Ch. 5, pp. 117 - 121)	
9	24	Oct 19	Natural Deduction for QL1 (Chapter 6)	HW6 Due
	25	Oct 21	Natural Deduction for QL1 (Chapter 6)	
	26	Oct 23	Natural Deduction for QL1 (Chapter 6)	
10	27	Oct 26	QL1 Translation	**Exam 3 Due**

	28	Oct 28	QL Syntax/Model/Truth	
	29	Oct 30	QL-Entailment and Other Logical Relations	
11	30	Nov 2	QL-Entailment and Other Logical Relations (2)	HW7 Due
	31	Nov 4	Natural Deduction for QL (Chapter 6)	
	32	Nov 6	Natural Deduction for QL (Chapter 6)	
12	33	Nov 9	QL-Identity and Natural Deduction for QLI	HW7 Due
	34	Nov 11	QL and QLI Translation	
	35	Nov 13	Many Value Logic	
13	36	Nov 16	Topics on Applied Logic	HW9 Due
	37	Nov 18	Topics on Applied Logic	
	38	Nov 20	Topics on Applied Logic	
14		Nov 23	Independent Study Day (No Class)	HW10 Due
		Nov 25	Thanksgiving Recess (No Class)	
		Nov 27	Thanksgiving Recess (No Class)	
15		Nov 30	Independent Study Week (No Class)	
		Dec 2	Independent Study Week (No Class)	
		Dec 4	Independent Study Week (No Class)	**Exam 4 Due**